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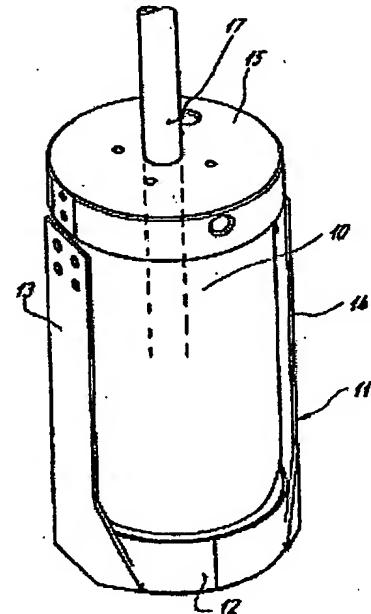
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Petition for search requested according to § 7 Section 1 of the Utility Model Act

⁵⁴ Paint Supply in Very Small Batch Sizes¹ for a Paint Spraying Unit

⁵⁷ Paint supply in very small batch sizes for a paint spraying unit, in particular for very small batch sizes, possibly with a conveyor for the transport of objects to be sprayed and with a spray unit which is equipped with a paint container, characterized in that the paint container is designed as exchangeable container and in volume in agreement with the batch size, and which is localized against a holder (15) by means of a fastening device (20, 21, 22, 23).



¹ or Very Small Amounts

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Paint Supply in Very Small Batches for a Paint Spraying Unit

The invention concerns a paint supply in very small batch sizes for a paint spraying unit, in particular for very small batch sizes, possibly with a conveyor for the transport of objects to be sprayed and with a spray unit which is equipped with a paint container.

With the surface spray-coating equipment under consideration, the objects to be sprayed are transported through the spray booth by means of a conveyor. The spray booth is equipped with at least one controlled spray gun for providing the object with the coat of paint or the layer of paint. The paint container with currently known surface spray-coating equipment is usually a packing drum with a relatively large content. In practice, such paint spraying units have faired very well. Paint containers as large as possible are used because it is usual for a relatively large number of pieces to be spray-painted in the same shade.

In more recent times it is also very small batch sizes which are processed, i.e., the number of objects to be sprayed in the same shade is extremely low. Such components are made as a function of the options and the shades ordered. From that results that each time one must use the paint container comprising the correct color.

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It is the object of the invention to design a paint supply in very small batch sizes for a paint spraying unit of the kind described more closely at the outset such that exchanging the paint container, especially with very small batch sizes, can be performed in the most simple way as well as in the shortest time, and that after completion it is as empty as possible or that the residual amount of paint is only so large that the paint container may be disposed of.

The means for attaining this object are in that the paint container is designed as exchangeable container and in volume in agreement with the batch size, and that it is localized by means of a fastening device against a holder.

Through the design of the paint container as exchangeable container it is already possible to perform the changing more easily and in a shorter time than with the embodiment known until now. This is especially valid as the fastening device, too, is configured according to the design of the exchangeable container. The paint spraying unit may be used for the most varied applications. It is, however, known how many objects normally get the same shade. Since the amount of paint needed results out of this, one can dimension the capacity of the exchangeable container accordingly or else the size of the exchangeable container for the paint spraying unit is designed for the largest amount of paint and for the individual applications one then fills in an appropriate amount.

A cost-effective solution for the paint container is given if it consists of a flexible packaging container containing the paint, preferably a bag of synthetic material, and of a dimensionally stable outer container holding the flexible packaging container. Following its emptying, the flexible packaging container can then be disposed of in a environmentally safe [way], while the outer container is used for the next packaging container. The dimensional stability furthermore offers the advantage that it can be localized securely to a holder by means of the fastening device. The fastening device is designed such that the upper edge of the packaging container, the [edge] associated with the filling and withdrawal opening is constrained. The outer container is also designated as support and pressure container for the flexible packaging container. Through that, a pressure can be applied in advantageous manner to the flexible packaging container such that the flow to the spray gun is enabled. Usefully this flow to the spray gun takes place

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through a rising pipe which extends at least in part into the flexible packaging container and which projects with respect to the outer container such that the flow connection to the spray gun can be created, for example, with a tube. In order for the outer container not to be attacked by the substances of the paint, it should usefully be made of a resistant material. It is furthermore advantageous if this material is transparent because then the content of the packaging container, also made of a transparent material, becomes visible. In a preferred embodiment, glass would be a suitable material, but where a stainless metal may also be considered. Usefully, the outer container has an annular cross-section, is open on the upper side facing the holder and on the opposite side designed as a hemisphere. Through the annular shaping of the cross-section, the flexible packaging container can deform according to the cross-section. In addition, no corners or edges are formed due to the design, such that the cleaning is made easier. The changing of the paint container is especially easy to perform if the fastening device may be manipulated without tools. The fastening device is usefully equipped with a support element surrounding at least in part the outer container. The support element is thereby designed so that it preferably lies against the lower area of the outer container, such that in the pretensioned state, the fastening device including the support element of the holders and the outer container form a rigid structural unit, whereby the flexible packaging container is fastened tightly at the upper edge. The support element is usefully designed basket-like and has at least two upright supports running in the central longitudinal axis of the outer container, and that² in order to support the container, each support element has a support ring or a support disk at the lower end facing away from the holder. The lower bottom ends of the upright supports can widen at least over the area of the support ring or of the support disk, such that with respect to the supports, the support ring or the support disk or the outer container are surrounded by an enlarged angular range. Fixed to the support element there are at least two tension levers standing at the same angular distance with respect to one another, which may be swiveled around an axis standing perpendicular to the central longitudinal axis of the outer container. The tension lever are mounted to fixed extension arms which are fastened to the upper end regions of the support elements facing the holder. Through that they are arranged in the connecting area between the holder and the outer container. In order to brace the holder with the outer container it is provided that

² sic. does not fit the overall structure of the phrase

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a clip or a tension bracket is mounted to each tension lever such that the paint container may be localized friction-locked, yet removably against the holder. The tension levers are furthermore designed such that in the tensioned state they do not swivel back automatically so that the connection between the holder and the paint container is released. For this it is useful if the points of fastening of the clip or of the tension bracket are shifted downwards with respect to the swivel axes of the tension lever. The tension lever works in particular according to the principle of [a] knuckle joint. Usefully, the holder consists essentially of a lid, a holding ring clamping the upper edge of the flexible packaging container between³ the upper end face of the outer container, a ring-like tension cone interacting with the holding ring as well as appropriate seals. In order to put the paint container under pressure it is provided for the lid to be equipped with a pneumatic connection as well as with a paint output opening. Attached on the outside of the lid edge there are abutments⁴ placed positionally aligned with the tension levers or with the tension brackets or clip, which are provided on the outer side with edges raised with respect to the contact surface so that the clip or the tension bracket do not slip off.

The invention is explained more closely by means of the enclosed drawings. [The figures] show:

Figure 1 the paint container of the paint spraying unit according to the invention, partially assembled,

Figure 2 the paint container including the fastening device and the holder with view to the two tension levers,

Figure 3 a representation corresponding to Figure 2, but with a viewing direction changed by 90°,

Figure 4 a top view corresponding to Figure 3.

For reasons of better explanation, the fastening device is not represented in the embodiment according to Figure 1. The paint container for holding the paint is an

³ sic. *an* = *at* or the like must have been intended (see claim 14)

⁴ possibly *supports*

exchangeable container which can be exchanged in a simple way for another paint container, as will further be explained more closely. The paint container consists of an outer container 10 with annular cross-section and inserted in it a packaging container, for example, a plastic bag holding the paint. As shown in Figure 1, a rising pipe 17 extends into the packaging container, through which the paint is lead out of the packaging container into the spray gun. A tube can be connected in a manner not represented more closely to the end of the rising pipe 17 that projects with respect to the outer container, the other end of which is connected to the spray gun [which is] not represented. At the lower side facing away from the open side, the outer container 10 is shaped hemisphere-like. In a preferred embodiment, the outer container 10 is made of glass. The outer container 10 is inserted into a support element which at the lower end has a support ring 12 touching the lower margin of the outer container 10. In the represented embodiment, the support element 11 further comprises two upright standing supports 13, 14 which extend up to the upper margin of the outer container 10. The bottom ends of the supports 13, 14 are inclined such that the support ring 12 is surrounded by a larger surface. The outer container 10 including the packaging container held in it is clamped tight by means of a holder 15 and a fastening device. The holder 15 is designed as a connecting head and attached tightly to a part of the paint spraying unit. The holder 15 or the connecting head, respectively, is provided with a pneumatic connection 16 and a rising pipe 17.

Two extension arms 18, 19 are fastened to the two supports 13, 15, in the upper region. Tension levers 20, 21 are rotatably mounted to the two extension arms 18, 19. The axes of rotation are marked with the reference numbers 20a and 21a. They lie in the upper area of each tension lever 20 and 21. Each tension lever 20, 21 interacts with a tension bracket 22, 23 designed in a U-shape. The tension brackets 22, 23 can be adjusted with respect to the tension levers 20, 21 by turning nuts 24. The tension levers 20, 21 and the tension brackets 22, 23 forming the fastening device work according to the principle of [a] knuckle joint. The holder 15 laps over the upper edge of the outer container 10. Two abutments 25, 26 are attached to the holders, correctly positioned with respect to the tension levers 20, 21. The outer edge of each abutment 25, 26 is raised with respect to the effective area so that the tension brackets 22, 23 do not slip off, or else, the tension

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brackets 22, 23 lie in groove-like recesses. A flat gasket is laid onto the upper edge of the outer container 10. The plastic bag [which is] not represented is held on a holding ring 27 lying on the flat gasket. The holding ring has a flange, the outer diameter of which coincides with the outer diameter of the outer container. An inside shoulder projects a little bit into the outer container 10. Laid onto the side facing away from the outer container 10 there is a further sealing ring. A tension ring 27 engages into the hole of the holding ring 27. This tension ring 27 is sealed off by means of a sealing element with respect to the holder 15 or its upper inside surface. In order to exchange the paint container, the two tension levers 20, 21 are swiveled away in opposite directions, away from the outer container. Through that, the tension brackets 22, 23 may come out of contact with the abutments 25, 26 such that the outer container 10 including the plastic bag as well as the holding ring 27⁵ and the tension ring 28⁶ can be lifted off the holder 15. A new plastic bag filled with paint may then be inserted into the outer container 10 and the latter is inserted in reversed order into the holder 15, the rising pipe 17 can possibly also be replaced thereby.

The invention is not restricted to the represented example of embodiment. It is essential for the paint container to consist of a flexible packaging and of an outer container 10 of a resistant material, and that this structural unit can be inserted into the holder 15 by means of a fastening device, without the aid of a tool.

⁵ sic.
⁶ sic.

Claims

1. Paint supply in very small batch sizes for a paint spraying unit, in particular for very small batch sizes, possibly with a conveyor for the transport of objects to be sprayed and with a spray unit which is equipped with a paint container, characterized in that the paint container is designed as exchangeable container and in volume in agreement with the batch size, and which is localized against a holder (15) by means of a fastening device (20, 21, 22, 23).
2. Paint supply in very small batch sizes for a paint spraying unit according to claim 1, characterized in that the paint container consists of a flexible packaging container comprising the paint, [a bag] preferably made of a synthetic material, and of a dimensionally stable outer container (10) accommodating the flexible packaging container.
3. Paint supply in very small batch sizes for a paint spraying unit according to claim 1 or 2, characterized in that the paint container is provided with at least one rising pipe for the emergence of paint extending at least in part into it.
4. Paint supply in very small batch sizes for a paint spraying unit according to claim 2, characterized in that the outer container (10) is made of a resistant, transparent material, preferably of glass.
5. Paint supply in very small batch sizes for a paint spraying unit according to claim 2 or 4, characterized in that the outer container (10) is designed annular in its cross-section and open at its upper end associated to the holder (15) and designed as a hemisphere at its opposite lying end.
6. Paint supply in very small batch sizes for a paint spraying unit according to claim 1, characterized in that the fastening device (20, 21, 22, 23) may be operated without tools.

7. Paint supply in very small batch sizes for a paint spraying unit according to claim 1 or 6, characterized in that the fastening device (20, 21, 22, 23) is equipped with a support element surrounding at least in part the outer container (10).
8. Paint supply in very small batch sizes for a paint spraying unit according to claim 7, characterized in that the support element is designed basket-like and has at least two upright supports (13, 14), and to support the outer container (10), the support element has in its lower area facing away from the holder a support ring (12) or a support disk.
9. Paint supply in very small batch sizes for a paint spraying unit according to claim 7 or 8, characterized in that localized against the support element there are at least two tension levers (20, 21) standing at the same angular distance with respect to one another, which may be swiveled around axes (20a, 21a) standing perpendicular to the central longitudinal axes of the outer container (10).
10. Paint supply in very small batch sizes for a paint spraying unit according to claim 9, characterized in that the tension levers (20, 21) are mounted to localized extension arms (18, 19) which are fastened to the support element in the upper terminal areas facing the holder (15).
11. Paint supply in very small batch sizes for a paint spraying unit according to claim 9 or 10, characterized in that a clip or a tension bracket (22, 23) is fastened to every tension lever (20, 21) in such a way that the paint container (10) is frictionally localized against the holder.
12. Paint supply in very small batch sizes for a paint spraying unit according to one or more of the preceding claims 8 through 11, characterized in that abutments (25, 26) fastened to the holder (15) are associated with the clips or the tension brackets (22, 23), and that the outer edges of the abutments (25, 26) are raised with respect to the contact surface, and that the mounting points for the clips or for the tension brackets (22, 23) are shifted downwards with respect to the axes of rotation (20a, 21a) of the tension levers (20, 21).

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13. Paint supply in very small batch sizes for a paint spraying unit according to one or more of the preceding claims 8 through 12, characterized in that the clips or the tension brackets (22, 23) are connected in an adjustable manner to the tension levers (20, 21).
14. Paint supply in very small batch sizes for a paint spraying unit according to claim 1, characterized in that the holder (15) consists essentially of a lid, a holding ring (27) clamping tight the upper edge of the flexible packaging container at the upper end surface of the outer container (10), a conic tension ring (28) interacting with the holding ring (27) as well as seals.
15. Paint supply in very small batch sizes for a paint spraying unit according to claim 14, characterized in that the holder (15) is provided with a pneumatic connection 16 as well as with a paint output opening (17), such that the flexible packaging container comprising the paint may be put under pressure.

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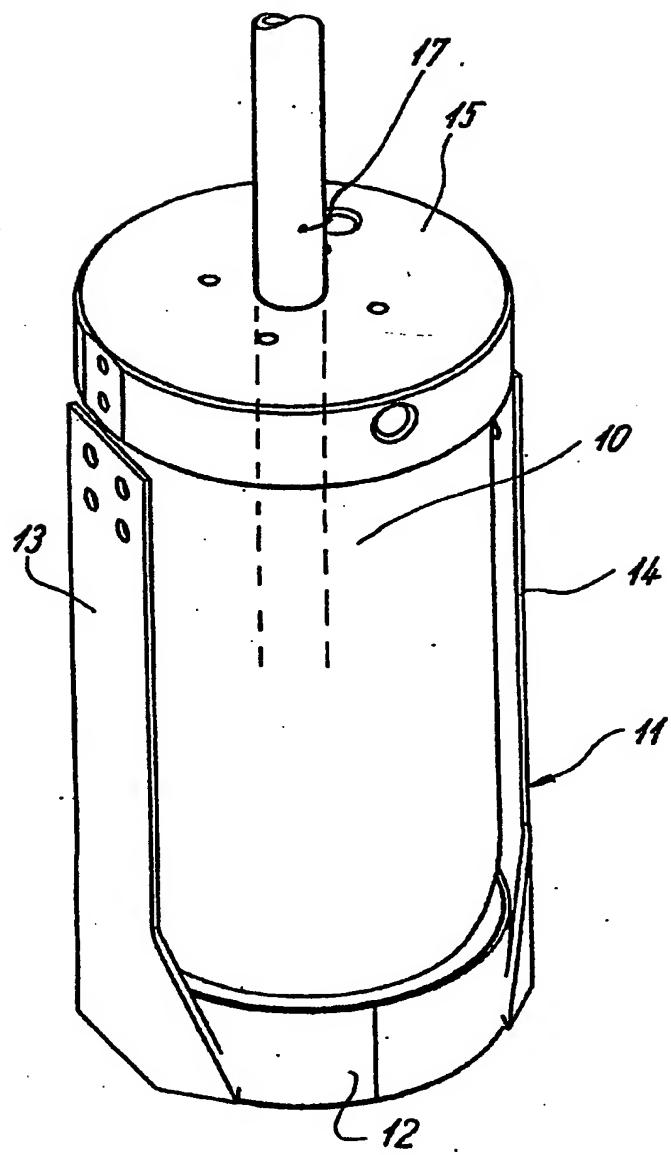


Fig. 1

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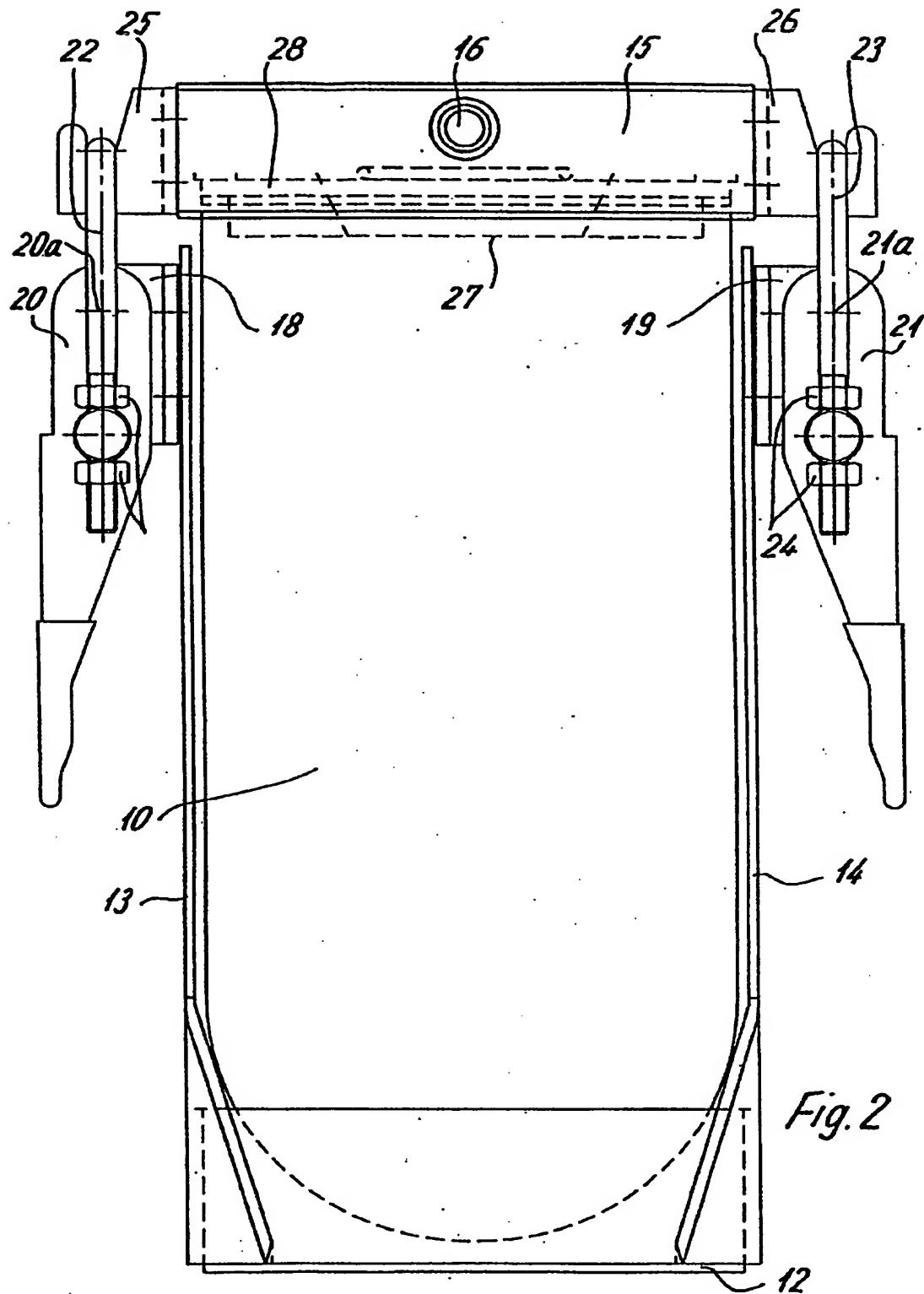


Fig. 2

DE 20117496 U1

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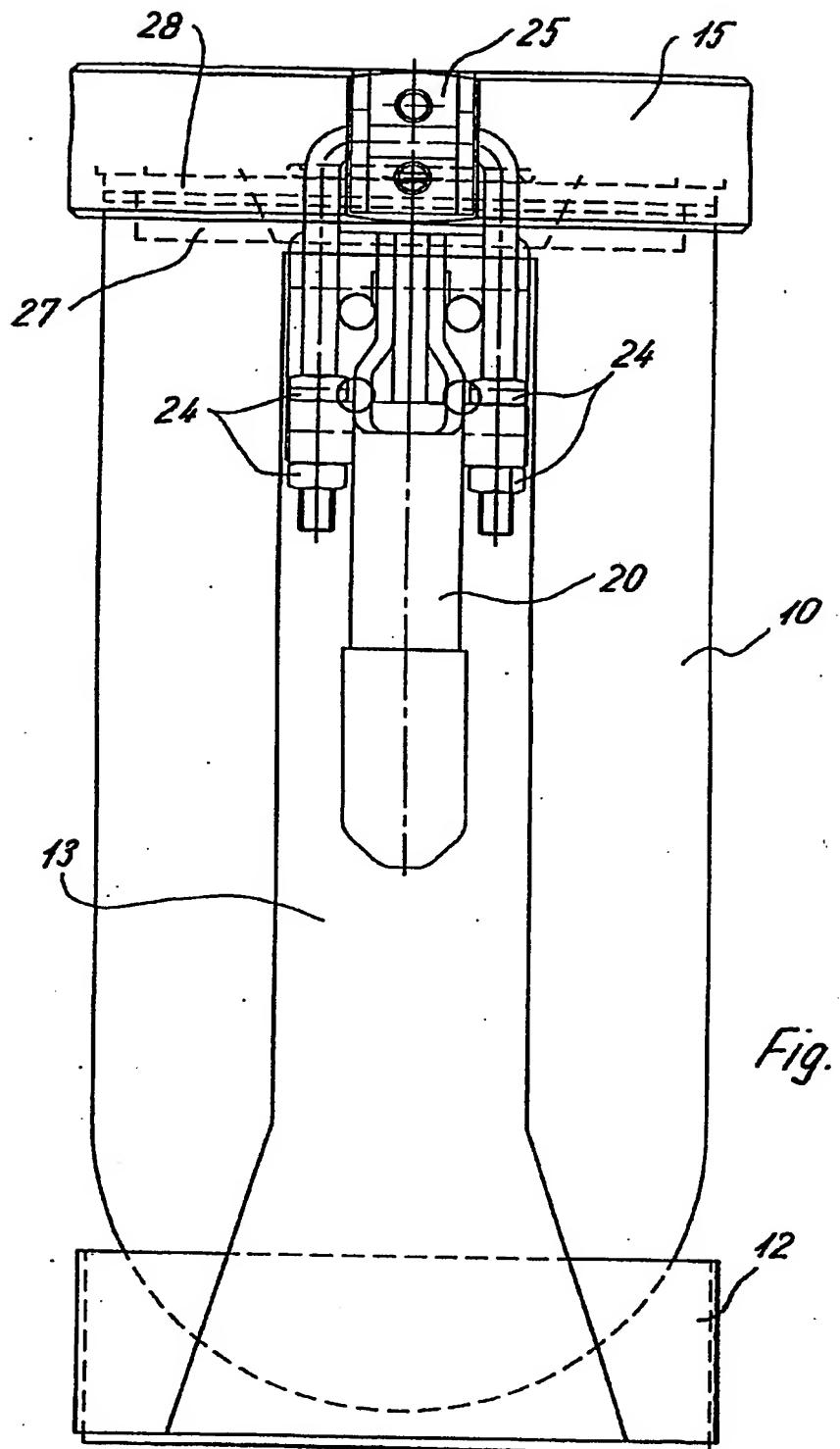


Fig. 3

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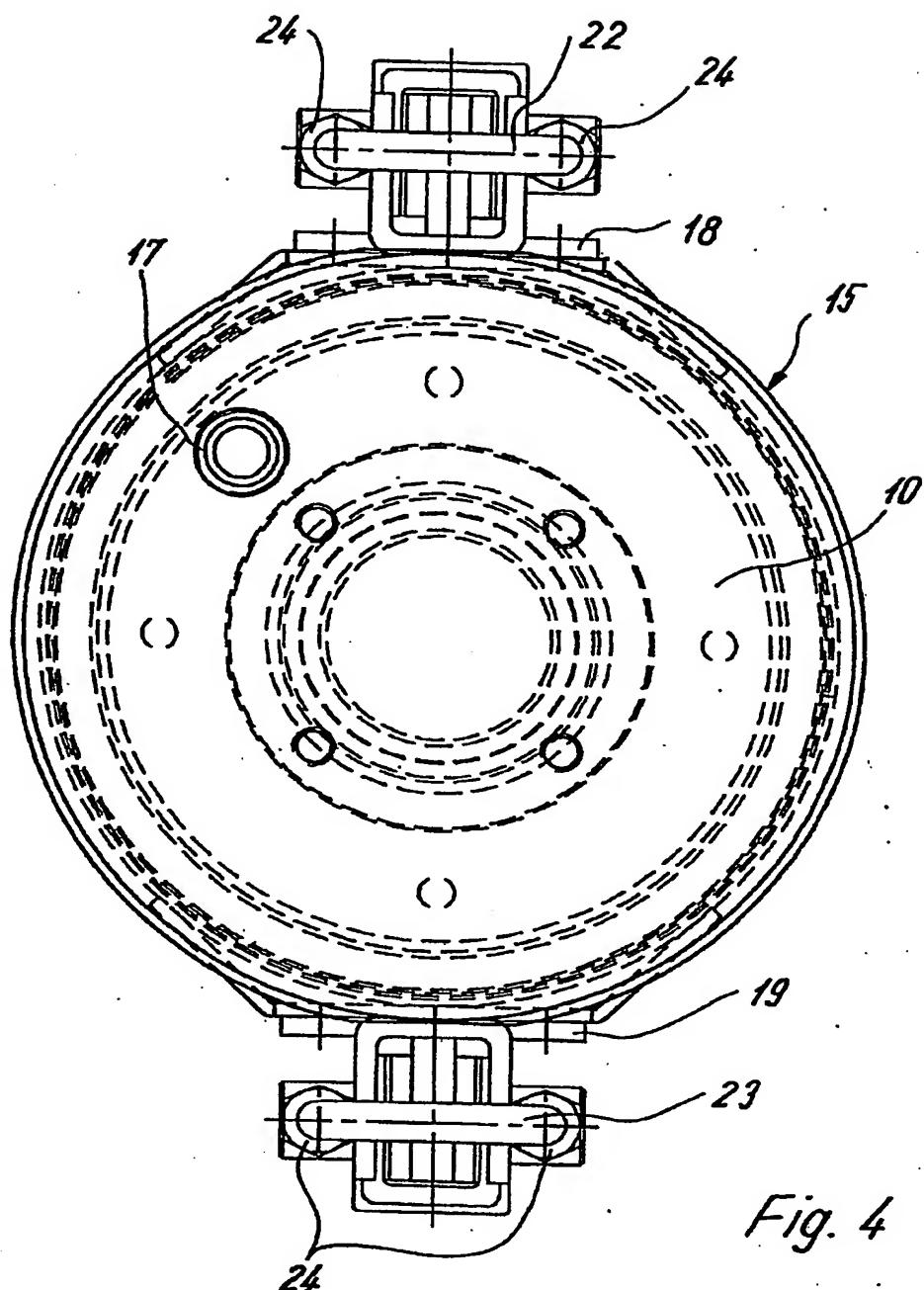


Fig. 4

DE 20117496 U1

Spray Gun Liners Pats ETA

Abstract Doc

Category:

Title: Fine mixture paint feed pot for spray gun has paint container with exchangeable paint bag held in clamped on outer container

Patent Assignee:
VENJAKOB MASCHBAU GMBH & CO KG VENJ-

Abstract:
Abstract (Basic): DE 20117496U

NOVELTY - The mixing pot for a paint spray gun has a paint container which can be exchangeable and held by a clamp (20-23) onto a cap holder (15). The paint container can be flexible, such as a plastic bag with a rigid outer support container (10). The rigid container can have an outlet pipe extending into the paint bag. The container can be circular in cross section.

USE - For paint spraying

ADVANTAGE - Allows rapid changing of paint container

DESCRIPTION OF DRAWING(S) - Drawing shows sketch view of container

Support holder container 10

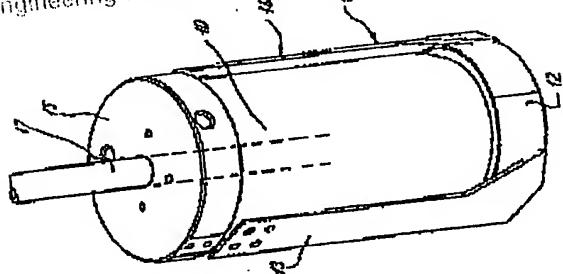
Cap 15

Clamp 20-23

Dwg.1/4

Clipped Images:

Engineering Drawing:



Patent Family: If available, click on fulltext doclink to view the associated fulltext/image doc.							
Fulltext	Entry	Serial	Kind	Date	Week	Pages	Lang
Doclink	DE 20117496	U1	20020103	200219	014	-	

Priorities:			
Country	Serial	Date	Type
DE	20117496	20011025	U

Local Applications:			
Related No	Serial	Date	Type

DE 20117496U1 2001DE-201749 20011025 U A
6

IPC:

Class	Group	Sub-Group
B05B	009	04
B05B	013	00

Derwent Class:

P42

Indexing Terms:

Standard Thesaurus Terms	Additional Indexing Terms
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FINE

MIXTURE

PAINT

FEED

POT

SPRAY

GUN

PAINT

CONTAINER

EXCHANGE

PAINT

BAG

HELD

CLAMP.

OUTER

CONTAINER

Secondary Accession Numbers:

CPI Secondary Accession Number: -

Non-CPI Secondary Accession Number: N2002-106824

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Current Patent Number: DE 20117496U1

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